

ABSTRACT OF THE DISCLOSURE

To provide a semiconductor device, such as semiconductor laser, having no need of complicated process, ensuring a high yield and mass-productivity necessary for cost reduction, and exhibiting excellent initial characteristics and reliability, nitride semiconductor layers containing a plurality of group III elements are formed on a base body surface having recess (opening) such that the nitride semiconductor layer varies in at least one of composition ratio of the group III elements, band gap energy, refractive index, electrical conductivity and specific resistance within the layer in response to the recess of the base body. In addition, by heating the structure in an atmosphere containing hydrogen and using a layer containing Al as an etching stop layer, controllability and production yield can be improved without influences from fluctuation in etching depth, or the like. Further, etching and re-growth can be conducted consecutively to provide an inexpensive process.